

414 **Supplementary Material**

415 **Element-specific Tipping Risks**

416 Beyond the assessment of tipping risk for at least one element to be tipped, we analyzed risks for at least 2-4 elements, and
417 each individual element to be tipped, shown in Figure [S3](#) and Figure [S4](#). Including more tipping elements into the calculation
418 decreases the risk values, due to their different characteristics, like thresholds, time scales, and effects, they are influenced by.
419 Even though similarities between cases for at least one to four elements tipped and the individual elements exist, they should
420 not be treated as equal.

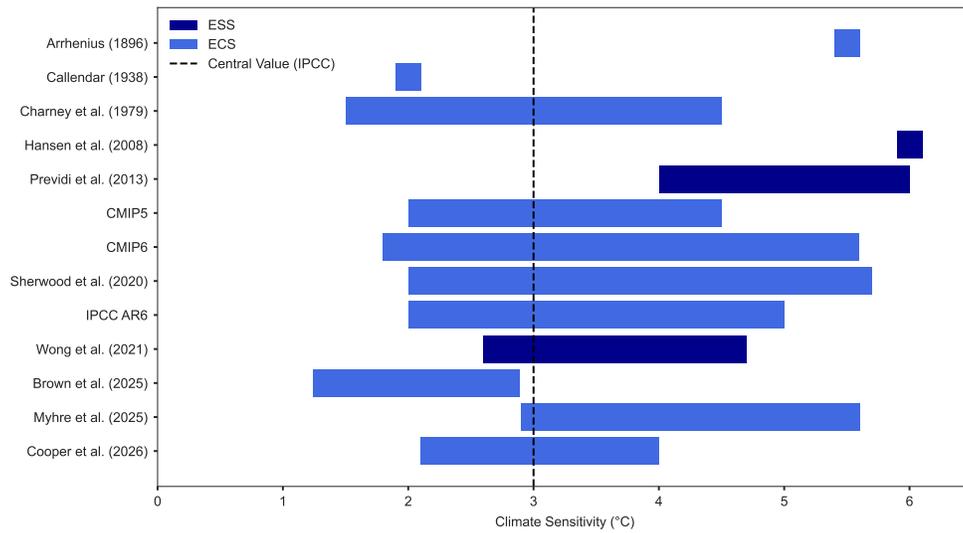


Fig. S1 | Climate Sensitivity Estimates. Overview of Climate Sensitivity estimates in chronological order. We distinguish between Equilibrium Climate Sensitivity (ECS) (only including short-term climate feedbacks) and Earth System Sensitivity (ESS) (additionally including long-term feedbacks such as tipping events).

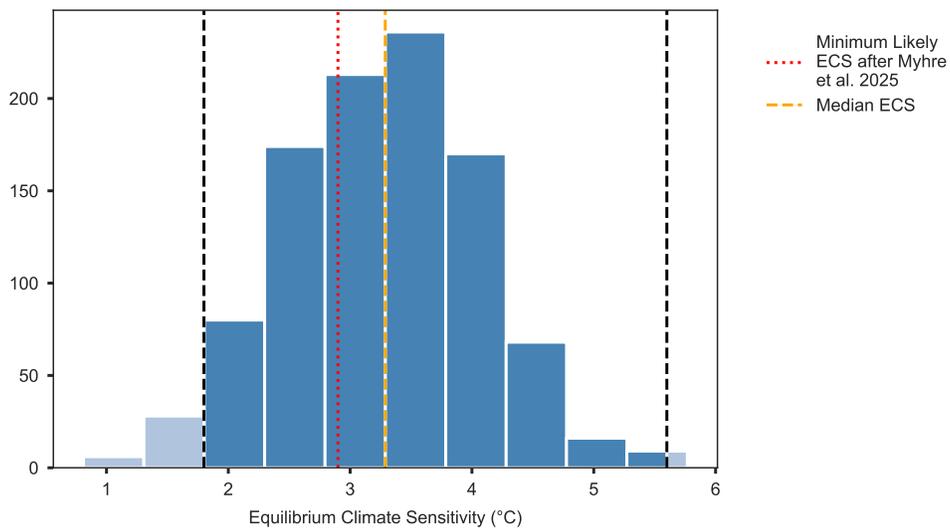


Fig. S2 | ECS Ensemble Histogram. Histogram of generated Equilibrium Climate Sensitivity (ECS) ensemble. Dashed black lines mark the CMIP6 derived constraint at 1.8 to 5.6°C. The orange dashed line indicates the median ECS at 3.3°C.

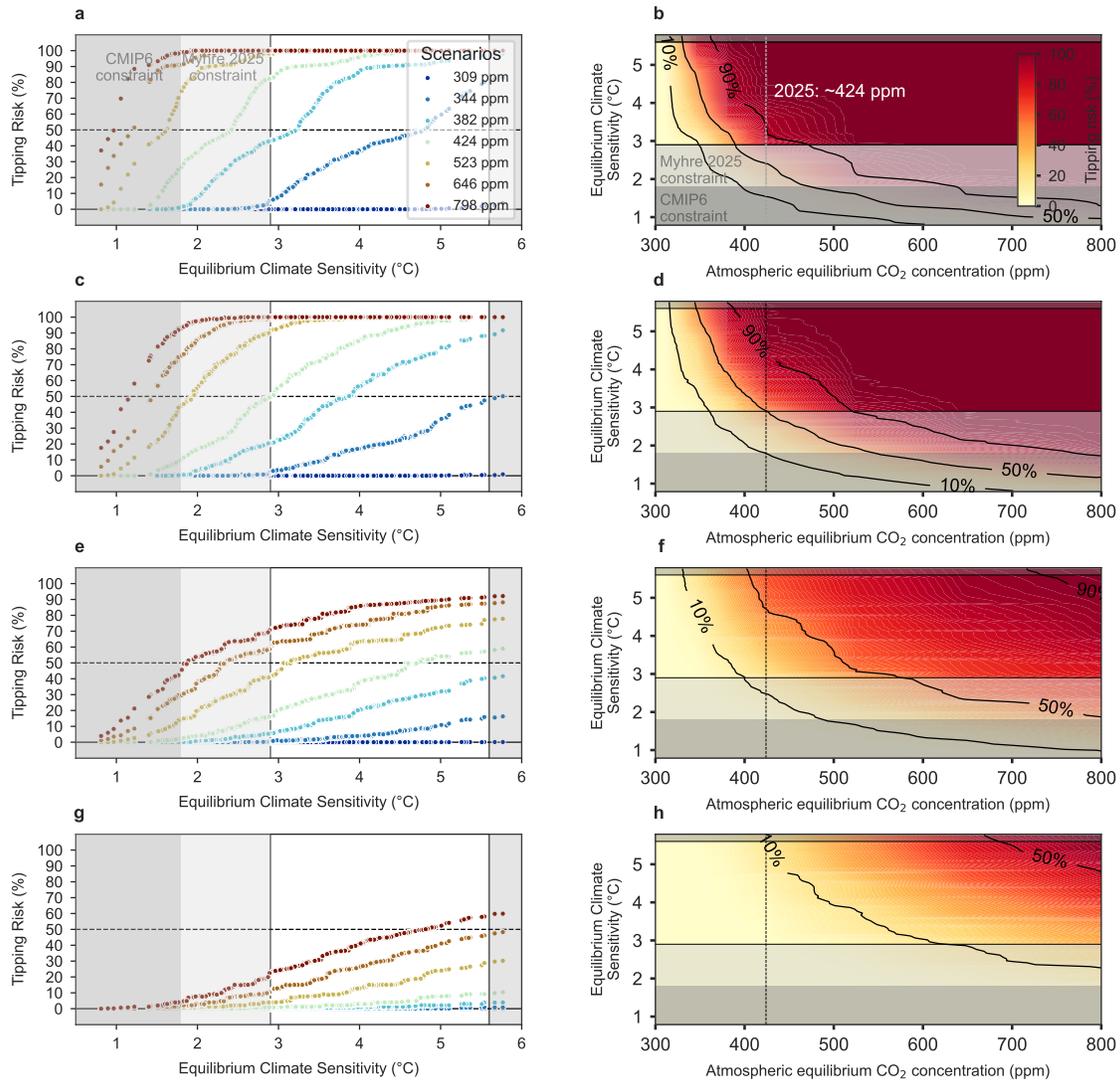


Fig. S3 | Results for more than one tipped element. Equilibrium Climate Sensitivity (ECS) - tipping risk relation and tipping risk as a function of atmospheric CO₂ concentration and ECS for **a – b**, at least one, **c – d**, at least two, **e – f**, at least three, and **g – h**, all four elements tip.

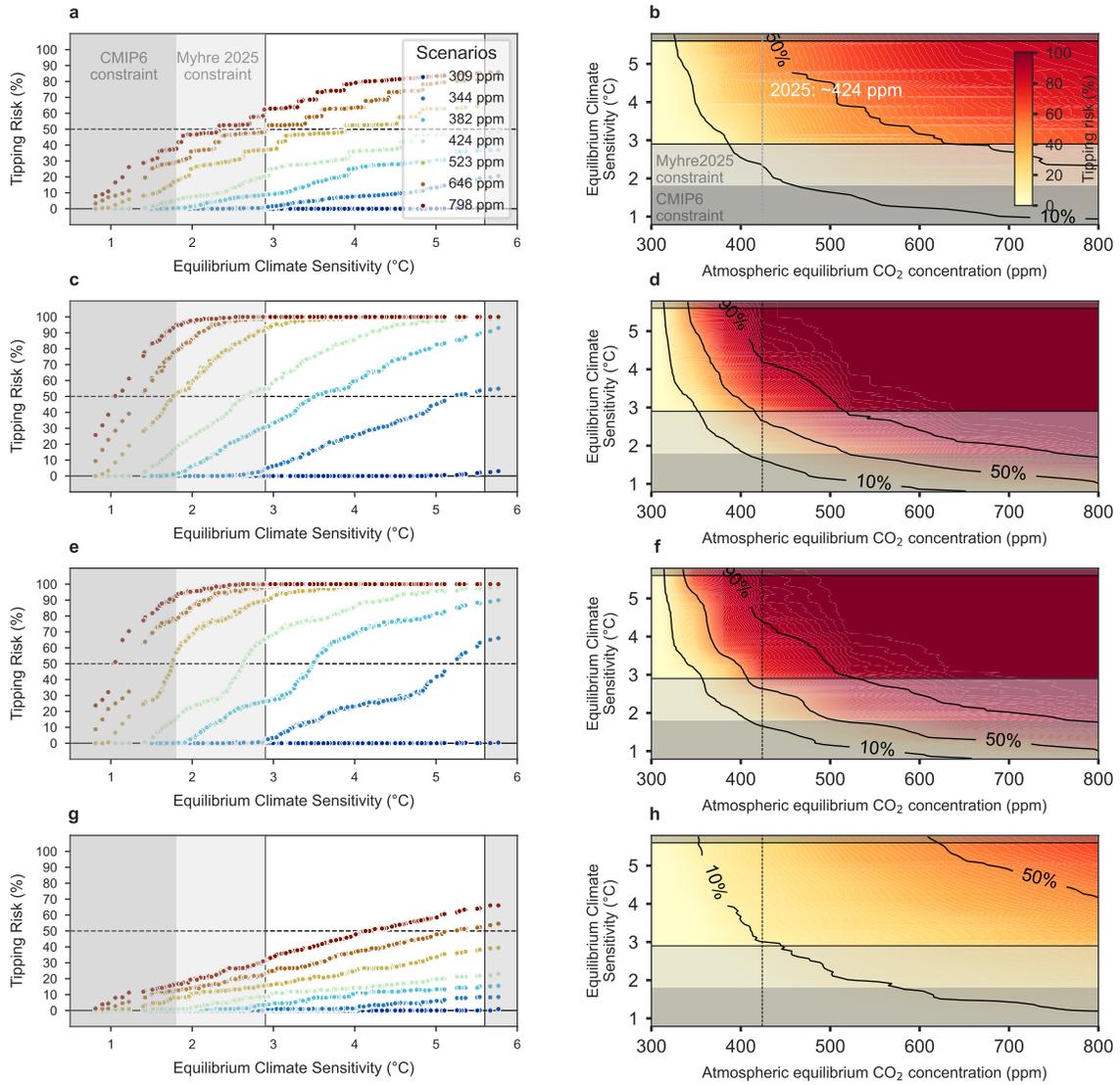


Fig. S4 | Results for specific Tipping Elements. Equilibrium Climate Sensitivity (ECS) - tipping risk relation and tipping risk as a function of atmospheric CO₂ concentration and ECS for **a – b**, Greenland Ice Sheet (GIS), **c – d**, Atlantic Meridional Overturn Circulation (AMOC), **e – f**, West Antarctic Ice Sheet (WAIS), and **g – h**, Amazon rainforest (AMAZ), respectively.